

Date: Friday, 10/13/2006 9:25:57 AM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : EC 135 SKIDTUBE ASSEMBLY
Job Number : 28955	
Estimate Number : 12472	
P.O. Number : <i>N/A</i>	Part Number : D135751011
This Issue : 10/13/2006 S.O. No. : <i>NR</i>	Drawing Number : D3507 REV <i>AB 4/16/12-18</i>
Prsht Rev. : <i>NC</i>	Project Number : N/A
First Issue : <i>N/A</i> Type : LANDING GEAR	Drawing Revision : A
Previous Run : 28954	Material : <i>N/A</i>
Written By : <i>JA</i>	Due Date : 11/15/2006 Qty: 1 Um: Each
Checked & Approved By : <i>JA 06 10 13</i>	
Comment : Est Rev: A 06-06-21 New Issue JLM	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
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Comment: DOCUMENT CONTROL

Photocopy bluefile & type labels per PPP D135-751-011 CHG001

7/12/19

2.0	D2962150	3.540 Outer Tube, Extrud
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Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2962-150 Extrusion

B27274 DP 6-11-18

3.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

1-Determine square end of tube and deburr

2-Drill #30 pilot holes using DT8678. Do not open holes.

3- Deburr holes.

N/A

4.0	BENDING	BENDING MACHINE
-----	---------	-----------------



Comment: BENDING MACHINE

Bend tube as per program on CNC Bender and Dwg D3507. Use 5/16" locator pin on buggy "A".

N/A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 12/18/2006 1:57:00 PM
User: Jean-Luc Menard

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28955

Part Number: D135751011

Job Number:



Seq. #: Machine Or Operation: Description :

5.0 LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut Fwd end of the tube using DT8185

2-Cut Aft end at VC using DT8185

3-Deburr ends

4-Drill Aft & Fwd Cap holes using DT8678

5-Locate DT8870 & Drill Ground wire hole on top of Tube.

6-Locate DT8870 with 3/16cleco in Ground wire hole ,then Pilot Drill all X-Bolt holes using 3/16" drill.

7-Open Aft & Fwd Cap holes using .208" drill.

8-Drill pilot holes for wearplates using Dt8868

9-Open wearplate holes to Ø19/64" (0.297") as per Dwg D3507.

10-Bore out aft end of tube as per Dwg D3507 & Detail "B".

11-Deburr holes.

6-11-18

6.0 QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07/02/28 (1)

7.0 HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

07-03-01

8.0 QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

07-03-01

11-18

11-18

Date: Monday, 12/18/2006 1:57:00 PM
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Process Sheet

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Job Number: 28955

Part Number: D135751011

Job Number:



Seq. #: Machine Or Operation: Description :

9.0 D35043 CROSSBOLT SPACER



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

CROSSBOLT SPACER

Batch: B 28034 (22) BE 07-03-26 PTO

10.0 D35041 CROSSBOLT SPACER



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

CROSSBOLT SPACER

Batch: B 28033 (22) B 31234 (12) BE 07-03-26 PTO

11.0 D35051 WEB



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

WEB

Batch: B 28962 Pm 07-03-01 (1)

12.0 D35061 DOUBLER



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

DOUBLER

Batch: B 28963 Pm 07-03-28 (1)

13.0 D35063 DOUBLER



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

DOUBLER

Batch: B 28964 Pm 07-03-28 (1)

14.0 MS20601AD4W3 Rivet



Comment: Qty.: 12.0000 Each(s)/Unit Total: 12.0000 Each(s)

Rivet

Batch: M 8325 Pm 07-03-28

15.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open X-Bolt holes to .375"(2Places) & .500"(2Places) as per Dwg D3507. and Detail "F" Pm 07-03-01 (1)

2-Counter Sink X-BOLT holes as per Dwg D3507 Pm 07-03-01 (1)

D35043 B28034 1 EXTRA CROSSBOLT SPACER
USED FOR WEIDTEST.

D35041 B28033 1 EXTRA CROSSBOLT SPACER
USED FOR WEIDTEST

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28955

Part Number: D135751011

Job Number:



Seq. #: Machine Or Operation: Description :

3-Deburr and blow out chips from inside of tube. *Pm'07-03-01*

4-Bond web as per Dwg D3507 & QSI 015

A/R 241 Sike Flex Batch: *M103497*

Exp Date: *07-10-01*

Pm'07-03-01

5-Weld x-bolt (D3504-1/-3) spacers as per Dwg D3507 and Detail C-C & D-D.

A/R AL ROD Batch: *M103317* *BE 07-03-26*

6-Grind welds flush *BE 07-03-26*

7-Drill Rivet Holes as per Dwg D3507 Using Dt8871A&B *BE 07-03-26*

8-Deburr Rivet holes. *BE 07-03-26*

Tools: E

16.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

07/03/28

17.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Pm'07-03-28

1-Rivet D3506-1/-3 as per Dwg D3507.

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07/03/28

19.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M105068 BR/FZ

07-08-21

PRESS. WASH BR/FZ 07-08-20

20.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FZ

07/08/27

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28955

Part Number: D135751011

Job Number:



** See w/o 36166 p*

Seq. #:

Machine Or Operation:

Description :

21.0

ALS71032130

Insert



Comment: Qty.: 38.0000 Each(s)/Unit Total : 38.0000 Each(s)

Insert

Batch: *m102475*

FL

22.0

ALS41032225

Insert



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Insert

Batch: *m19393*

FL

23.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Wearplate & Ground Wire inserts as per Dwg D3507.

FL 01/08/27

(1)

24.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Inspect Inserts

FL 01/08/27 (1)

25.0

D2965

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch: *~~D2965~~*

see w/o 36166

26.0

D29653

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

BATCH: *B29993*

FL

27.0

D35081

WEARPLATE



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPLATE

Batch: *B31195*

FL 01/08/27 (1)

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Process Sheet

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Job Number: 28955

Part Number: D135751011

Job Number:



Ⓟ See w/o 36166 Ⓢ

Seq. #:

Machine Or Operation:

Description:

28.0

D35083

WEARPLATE



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

WEARPLATE

Batch: B31196

FL

29.0

D35085

WEARPLATE



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

WEARPLATE

Batch: B31197

FL

30.0

D35087

WEARPLATE



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

WEARPLATE

Batch: B31198

FL

31.0

D35581

GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

GASKET

BATCH: B29998

FL

32.0

D35583

GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

GASKET

BATCH: B29999

FL

33.0

D35585

GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

GASKET

BATCH: B30000

FL

34.0

D35587

GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

GASKET

BATCH: B30001

FL 07/08/27 ①

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28955

Part Number: D135751011

Job Number:



* See w/b # 36/66 P

Seq. #:

Machine Or Operation:

Description :

35.0

D3492041

PLUG ASSEMBLY



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

PLUG ASSEMBLY

Batch: ~~B33075~~ B33075

FL

36.0

D3492047

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

PLUG ASSEMBLY

Batch: B28961

FL

37.0

AN960C10L

AN960C10L

Washer



Comment: Qty.: 35.0000 Each(s)/Unit Total : 35.0000 Each(s)

Washer

Batch: ~~m104885~~ m105473 m104537

FL

38.0

AN3C4A

BOLT



Comment: Qty.: 31.0000 Each(s)/Unit Total : 31.0000 Each(s)

BOLT

BATCH: ~~m105473~~ m105407

FL

39.0

AN3C5A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

BATCH: B104885

FL

40.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Inspect for Foreign objects

2-Install Fwd & Aft caps as per Dwg D3507 And Detail "A" & "B"

A/R 241 Sika Flex Batch: _____

Exp Date: _____

3-Install Wearplates as per Dwg D3507 ,seal screws with sikaflex.

Note:Install (1) screw and (1) washer on Ground Wire insert on top of tube

Do not Install Scews where indicated on Dwg(Note #6)

A/R 241 Sika Flex Batch: M105585

FL 07/12/17 (P)

Date: Monday, 12/18/2006 1:57:01 PM
User: Jean-Luc Menard

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28955

Part Number: D135751011

Job Number:



See w/o # 36166

Seq. #:

Machine Or Operation:

Description:

Exp Date: 08-07

4-Install Plug assemblys as per Dwg D3507.

5- Wing Walk as per Dwg D3043 and QSI 005 4.4

fd 07/12/19

41.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

See w/o # 36166

42.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

43.0

D35121

WEARPLATE



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

WEARPLATE

Batch: B36180

No quart

AS 07/12/19

(X1)

44.0

AN3C4A

BOLT



Comment: Qty.: 8.0000 Each(s)/Unit Total: 8.0000 Each(s)

BOLT

M105559

AS 07/12/19

(X1)

45.0

AN960JD10L

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total: 8.0000 Each(s)

Washer

Batch: M164374

AS 07/12/19

(X1)

46.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

See w/o # 36166

47.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D135-751-011

Location:

PPP Rev: PPP 36166

07/12/19

Date: Monday, 12/18/2006 1:57:01 PM
User: Jean-Luc Menard

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28955

Part Number: D135751011

Job Number:



Seq. #:

Machine Or Operation:

Description :

48.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

HD 87112124

Job Completion



U 87112124



DESIGN PH	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED H	APPROVED H	DRAWING NO. D3507	REV. B SHEET 1 OF 2
DATE 06.11.01		TITLE EC 135 SKIDTUBE	SCALE NTS
A	06.04.21	NEW ISSUE	
B	06.11.01	ADD GASKET, CHANGE HARDWARE MAT'L	

RELEASED

06.12.12 H

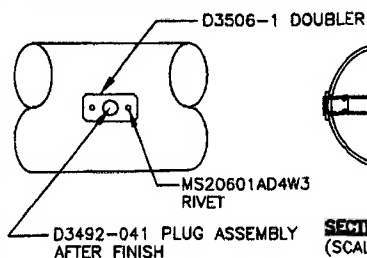
Qty	Part Number	Description
X	D3507-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2965	CAP
1	D2965-3	CAP
4	D3492-041	PLUG ASSEMBLY
2	D3492-047	PLUG ASSEMBLY
2	D3504-1	CROSS BOLT SPACER
1	D3504-3	CROSS BOLT SPACER
1	D3505-1	WEB
4	D3506-1	DOUBLER
2	D3506-3	DOUBLER
1	D3508-1	WEARPLATE
1	D3508-3	WEARPLATE
1	D3508-5	WEARPLATE
1	D3508-7	WEARPLATE
1	D3558-1	GASKET
1	D3558-3	GASKET
1	D3558-5	GASKET
1	D3558-7	GASKET
38	AELS-1032-130	INSERT
1	AELS-1032-225	INSERT
31	AN3C4A	BOLT
4	AN3C5A	BOLT
35	AN960C10L	WASHER
12	MS20601AD4W3	RIVET

GENERAL NOTES:

- 1) ALL DIMENSIONS ARE IN INCHES
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) WELDING TO BE DONE PER DART QSI 004.
- 4) INSERT D3505-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 5) USE DART DRILL TEMPLATE DT8868 TO LOCATE AND DRILL $\varnothing 0.297$ HOLES (38 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION C-C (38 PLACES) AFTER FINISH. SEAL WEARPLATE SCREWS WITH SIKAFLEX-241/-291.
- 6) DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS.
- 7) FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3505-1 WEB. POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3. ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4 (OPTIONAL)

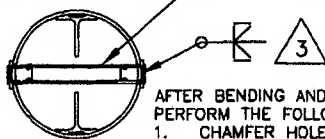
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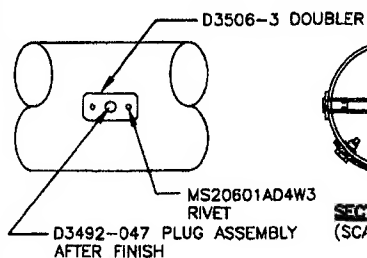


SECTION C-C
(SCALE 3:10)

D3504-1 CROSS BOLT SPACER

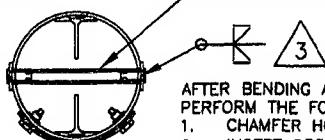


- AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING FOR $\phi 0.500$ HOLES ONLY:
1. CHAMFER HOLE $0.030 \times 45^\circ$
 2. INSERT D3504-1 CROSS BOLT SPACER (2 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. IF REQUIRED, PASS $\phi 0.404$ ('Y' DRILL) THROUGH HOLE
 5. INSTALL D3506-1 DOUBLER (4 PLACES) USING MS20601AD4W3 RIVET (8 PLACES)
 6. AFTER FINISH, INSTALL D3492-041 PLUG ASSEMBLY (4 PLACES)

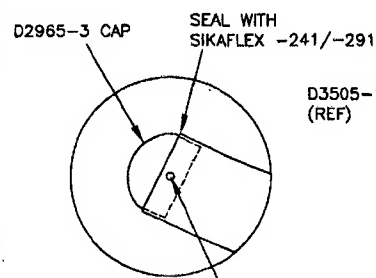
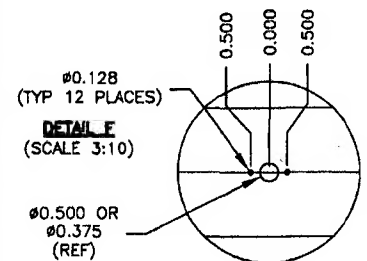


SECTION D-D
(SCALE 3:10)

D3504-3 CROSS BOLT SPACER

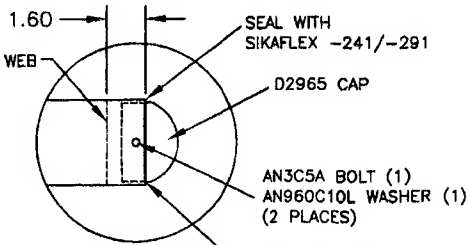


- AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING FOR $\phi 0.375$ HOLES ONLY:
1. CHAMFER HOLE $0.030 \times 45^\circ$
 2. INSERT D3504-3 CROSS BOLT SPACER (1 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. IF REQUIRED, PASS $\phi 0.277$ ('J' DRILL) DRILL THRU HOLE
 5. INSTALL D3506-3 DOUBLER (2 PLACES) USING MS20601AD4W3 RIVET (4 PLACES)
 6. AFTER FINISH, INSTALL D3492-047 PLUG ASSEMBLY (2 PLACES)



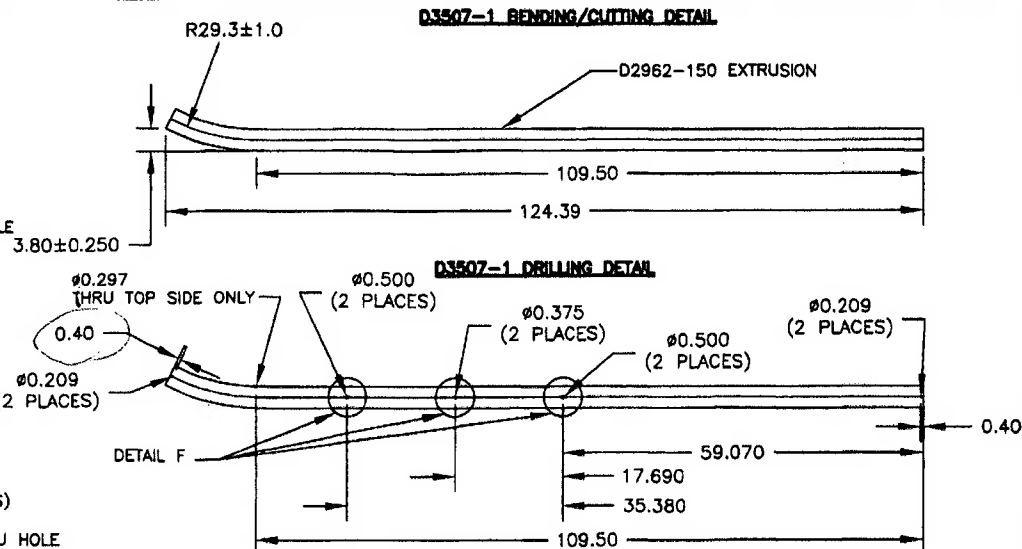
DETAIL A
(SCALE 1:5)

AN3C5A BOLT (1)
AN960C10L WASHER (1)
(2 PLACES)

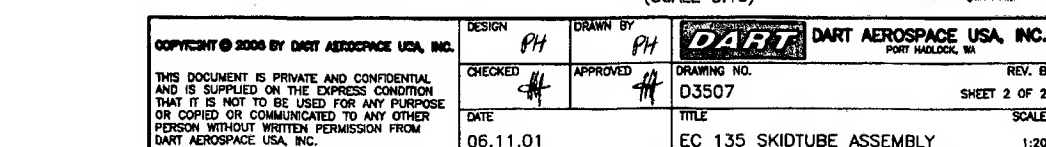
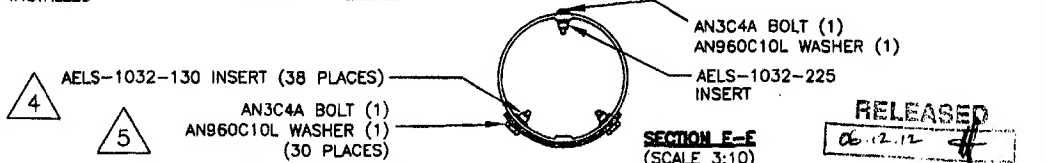
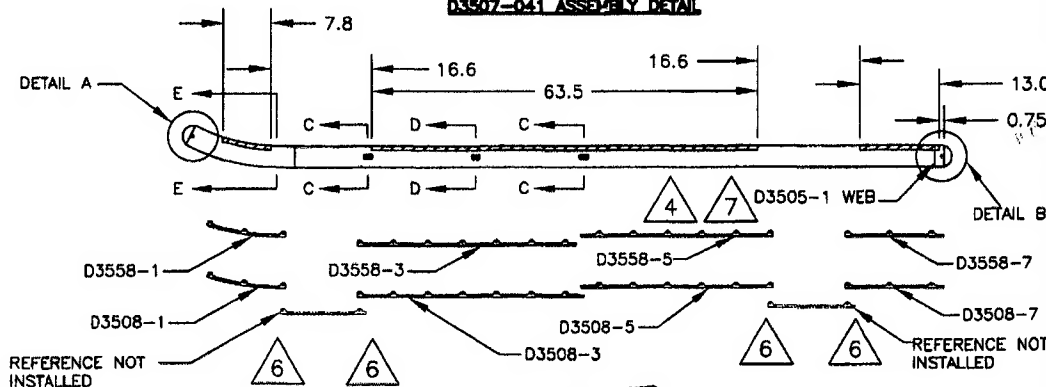


DETAIL B
(SCALE 1:5)

BORE OUT END OF SKIDTUBE
TO 0.05 DEPTH
AND 0.090 WALL



D3507-041 ASSEMBLY DETAIL



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THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.		CHECKED	#	APPROVED	#	DRAWING NO. D3507	SHEET 2 OF 2
		DATE	06.11.01	TITLE		EC 135 SKIDTUBE ASSEMBLY	SCALE 1:20

RELEASED
06.12.12

NO. 100

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name Barclay Elliott
Joint Welding Procedure Tig
Part number and Job number 135751011/B 28956

TEST WELDS REQUIRED

BASE METAL Alum WELDING PROCESS Tig
Penetration Complete [] Partial [☒]
Current AC [☒] DC [] Single Weld [☒] Double Weld []
Backing YES [] NO [☒]

	Position	Vertical	Down []	Up []
Sheet Groove	1G []	2G [<input checked="" type="checkbox"/>]	3G []	4G []
Tube Groove	1G []	2G [<input checked="" type="checkbox"/>]	5G []	6G []
Sheet Fillet	1F []	2F [<input checked="" type="checkbox"/>]	3F []	4F []
Tube Fillet	1F []	2F [<input checked="" type="checkbox"/>]	4F []	5F []

Crossbolt Spacer Welded into _____ Skidtube

TEST RESULTS

Visual Pass [☒] Fail []
Penetration Pass [☒] Fail []
Crossbolt Spacer Pass [☒] Fail []

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Date of Test Coupon 07/03/26 Qualifier [Signature]

